



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/672,888	09/26/2003	William T. Townsend	(47798) 57493	9563
21874	7590	05/31/2006	EXAMINER	
EDWARDS & ANGELL, LLP			KRAMER, DEAN J	
P.O. BOX 55874			ART UNIT	
BOSTON, MA 02205			PAPER NUMBER	
			3652	

DATE MAILED: 05/31/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/672,888	TOWNSEND ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Dean J. Kramer	3652	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 07 April 2006.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-38 is/are pending in the application.
- 4a) Of the above claim(s) 32-38 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-12, 15, 16 and 19-31 is/are rejected.
- 7) ☒ Claim(s) 13, 14, 17 and 18 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 April 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                                   | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)               | Paper No(s)/Mail Date. _____  |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>4/7/06</u> .  | 6) <input type="checkbox"/> Other: _____                                    |

## **DETAILED ACTION**

The amendment filed 4/7/06 and the remarks presented therewith have been carefully considered. However, they are not deemed to be fully persuasive.

### ***Claim Rejections - 35 USC § 112***

1. Claims 4, 21-23, and 27 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

There is no clear antecedent basis for "The self-contained, practical robotic hand" (claim 4, line 1 and claim 27, line 1) or "said robotic hand" (claims 21 and 22).

### ***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-10, 15, 16, 19, 20, 30, and 31, as understood, are rejected under 35 U.S.C. 102(b) as being anticipated by Goldman (2,567,066).

Goldman shows a self-contained gripper device comprising a plurality of fingers (14) each having at each rotary joint thereof an actuator (19), an electronic controller (22), wiring (25,29), and a network operating controller (30) for coordinating the

operation of all rotary joints. Regarding claims 2 and 10, a plurality of temperature sensors (40) can be mounted at various positions along the fingers (see Figs. 5 and 6), and the output of these sensors allows a user to *interactively* operate the gripper. In regard to claims 30 and 31, the outermost links (15) of each finger have a fingernail-like member attached thereto (see Figs. 2 and 3). In response to applicant's contention that the Goldman patent does not show a "self-contained" hand, it is pointed out that the Goldman device, including the control switch (30), when viewed as a single assembly can be considered "self-contained". Further, contrary to applicant's arguments in the last paragraph on page 13 of the response Goldman's actuators can be considered links (19) and the electronic controllers as solenoids (22) as so indicated in the rejection above. In regard to claim 4, Goldman shows at least two signal wires (42) and at least two power wires (25 or 29).

### ***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation

under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 11, 12, and 25-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Goldman (2,567,066) in view of Priolo et al. (5,346,351).

Goldman uses solenoids (22) to move the actuating linkage (19) of each joint rather than a brushless motor as is called for in the above claims of the instant application.

However, the patent to Priolo et al. shows a gripping mechanism (Fig. 3) having a brushless electric motor (101) driving a worm gear (97) to rotatably actuate a clamp (73).

Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to replace the solenoids of Goldman's mechanism with brushless motors and driven worm gears similar to that shown in the Priolo et al. patent as an alternative yet functionally equivalent means of pivoting a gripping link that could potentially create a stronger gripping force. Regarding claim 25, the distal end (i.e. the upper left end as depicted in Fig. 3) of the Priolo et al. rotor shaft (97) is supported in bearings outside of the motor housing (101).

7. Claims 21-24, 28, and 29, as understood, are rejected under 35 U.S.C. 103(a) as being unpatentable over Goldman in view of Maydan et al. (5,280,983).

The patent to Maydan et al. shows a gripping mechanism having optical sensors that use triangulation (see col. 18, lines 18-22) to control the gripper's position.

It would have been obvious to one of ordinary skill in the art to replace Goldman's temperature sensors (40) with any type of well known sensor, such as optical, electromagnetic, capacitance, on the exterior surface of the Goldman gripper as taught by Maydan et al. so that the gripper's position relative to the object being handled or an obstruction could be carefully detected and monitored.

#### ***Allowable Subject Matter***

8. Claims 13, 14, 17, and 18 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

#### ***Information Disclosure Statement***

9. The reference "A1" listed on the IDS submitted April 7, 2006 has been lined through because this reference had already been listed and considered on the IDS submitted October 12, 2005.

#### ***Election/Restrictions***

10. This application contains claims 32-38 drawn to an invention nonelected without traverse in the response filed 9/1/05. A complete reply to the final rejection must

Art Unit: 3652

include cancellation of nonelected claims or other appropriate action (37 CFR 1.144)

See MPEP § 821.01.

### ***Conclusion***

11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dean J. Kramer whose telephone number is (571) 272-6926. The examiner can normally be reached on Mon., Tues., Thurs., Fri. (7:00-5:00).

Art Unit: 3652

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eileen Lillis can be reached on (571) 272-6928. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read "Dean J. Kramer", followed by the date "5/25/06".

Dean J. Kramer  
Primary Examiner  
Art Unit 3652

djk  
5/25/06